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FIG. 1A



FIG. 1B

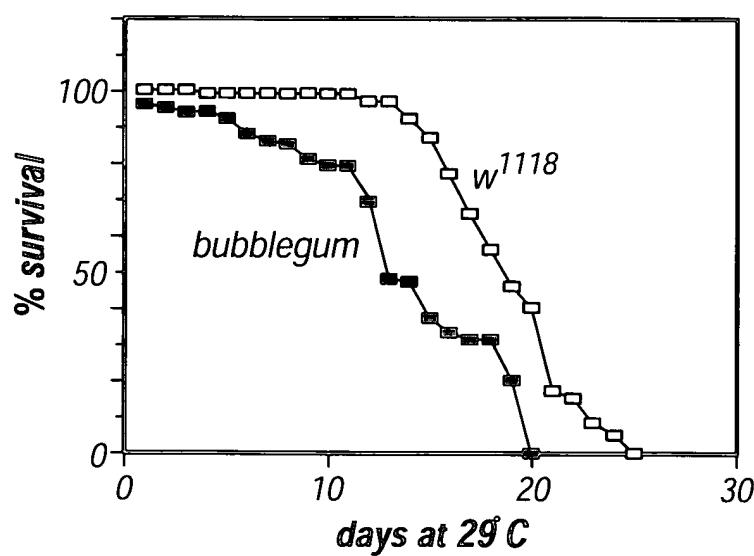


FIG. 1C

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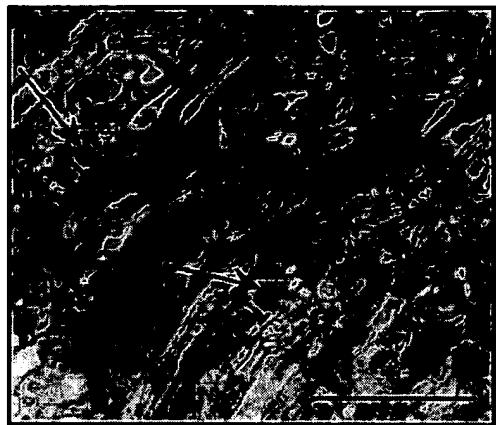


FIG. 2A

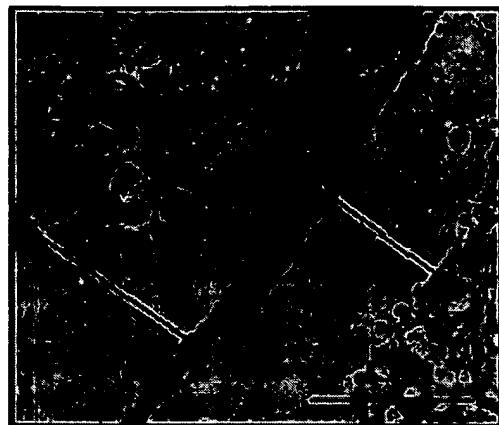


FIG. 2B

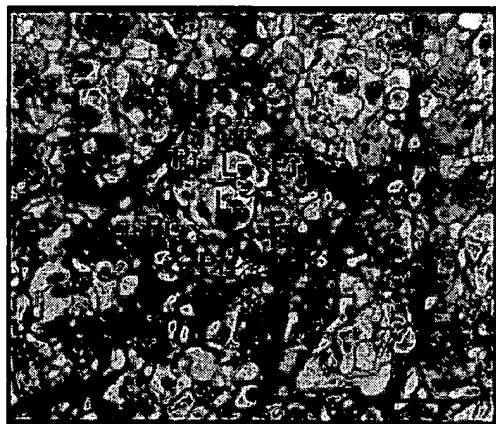


FIG. 2C

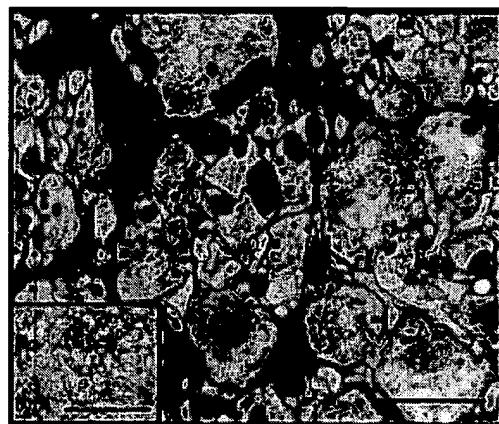


FIG. 2D

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CTGATTGGTCGTGTTCTCGAGCGAAAGAAAGAGTGGAGTATAGAAA
 ATAGACGGCAATCGGATTGCGTGACCAAAGAACAAATATAACATATATCGAGAACGC
CGTAGAACACCAAAACTAGTTAATTATCCTTGCAACAT
 CGTCTGGGCCAACCGCCCTGGGCAGGGATGCCTATCGCACCCAAATCGTCAGGAT
 GCCCTGCTGAAGGATTCGGTATGCCAAGGGATGGAATGGCGACTATCCTGGC
 GCAAGAACGGATAATCACACTGTCACCTACAAACAATTATGGCGAAGGAGCCATCTGGCTGGC
 CAAGGGCTTCAATTAAAGCTCGGTCTGGAGGACCCATTGGGGCATGGGGCATGGGAA
 TGCGCCGAATGGTTCTACTCGGCCATGGGGCATGGGGCATGGGGCATGGGAA
 TCTACACCACCAATTCCGCCATGGCAGTGCAGTCAGCACCTGGGAGCTTACATGCCCAAT
 CGTGTGCGTCAAGGCCAACGGCAAGCAATGGACAAGATTACGCCATTGGGAGCTGCC
 AAGCTCAAGGCCCATTCAGATCCAGGAGCCATTCCCTACTTGAAGAAGGGATG
 GCTACTACAGGTTGGAGATCGAGTCAGTGAGCTAGCGACGTGGAGGATCAGTACAT
 GACCCGTTGGAGAATGTCGGATCAACGAGTGTGGCTGGCTACACCTCCGGAACG
 GTGGGCATGCCAAGGGGGTGAATGCTCTCCCACGACAACATCACCTTCGATGTGGGGCA
 TCGTCAAGGCCATGGACCCGTGGTGGGAGCTGGTGAAGGGAACGCTGGTGAAGT
 TTGCGCACGTTGGCCGCCAGACCGTGGACATTACACCTGGGCTGGCTGCATT
 TGTTGCGGACAGGATGGCTGAAGGGAGCTGGTGAAGGCAAGGCTGGTGAAGT
 CCCACGGGATTCAAGGGCTGGCGTGGTGAAGGAGCTGGTGAAGT
 GTGGGCCAGCTCCAGGGCAGCCCTGAAGAAGATGCTGGCCAGCTGGGGATT
 CTGAAGGCACTACATGGTGAAGTCAGGCAAGGCTGGGATTCGGGTACAAGATTGCCA
 AGTCGGCTCATGTCATGGCCATTGGGCTGGGCTTCGATCGGGCTCCTACACTGGC
 CAGTGGCGCAGCTCCCATGTCGGCATGGGGAGACGAAGAAGTACTTCCCTCAGTCTGGACCTAAAG
 ATTGTCGATGCCTTCGGCATGTCAGAAACGGCCGGTTGTCACACCATCTGCCITCCCCGATTC
 CGTGGGTCTGAACACAATCGGCAAACACTTGGCCGGCTGGAGTCCAAGTCAACAAAG

FIG. 3A-1

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GATGCCAACGGTACGGAGGCTGTGCATCCGAGGACGTACCGTTCATGGGCTACATCG
ACAACAGGAGAACCGAGGACTGGCTGGATGACGGACTGGCTGGCTGCATTCCGGTGAATT
GGGATTGGATGACAAGGGTTATGTTCACTGACGGGACGATCCAAGGAGATCATCATTAA
CCGCAGGGCGAACATACCGCCAGTGCACATCGAGAACACGATCAAAGAAGGAAAGCTGG
ATGCCATTCCAATGCCCTTGGCTGGGGAGGAGCCAAATACTCACIGTCTGATCACC
CTAAAGACCGAAGTGGACAAGGATTCCGGTGGACGGAGCTAGCCACGAGTCCT
CCGTGTGGTGAATCGCTGGGAGTGGAGCACAGACCGTATCGGATACTGGATATCCTGGCGAG
GTCCCTGCCAACGGTGGAGGCTGGGATGCCATTAGGGCCAAACAAAGCAGTC
CATTCCAATGCCAACGGTTCAAGGTTACCAATTCTGCCACGGACTTCTCCATCCCC
CGCGGAACCTGGACCCACCCACCTAAAGGTTAAGGCTGCAACGGTTGGTCCAAAGATGTATG
CCGATGAGATCGAGAACCTATGCCCTAGATTGAAATTGCAAGATCGAAACCGATGATAGC
CGCGGAACCTGAGCTTAATGCTGAAATTGCAAGGACTTCCAAGCCAAATTGAGTGCCA
CTTTAATTGATTAGGCTGATGTTGGATATTAAACTAAGAACAACTATGGCCCTA
TGCCTAGGTAAGACCGAGCTGGCAACGATTAGGTGACCTAACTTAACTAAGTAAG
TTTATTTTTATTACTATTGGTTGACCAACTGAACAAACGAAATTGTTATTGTCTGAAG
AGCAACAAATTGTAAATTAGATTAACTACCAAAAAAA

FIG. 3A-2

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CTGAATTGGTGGTTGCTGCTGGTACAGGAAAGAAAGAGACTGGAGTATAGAAAATAGACGGCA
 ATCGATTGGTGGTACCAAAAGAACAAATATACTACATATATCGAGAACGCCGTAGAAACACCAAAACTAGTTA
 ATTATCCTTGCAACMSTIDALYNRPGPNNRLRQADAYRTTNRODAVKIRMAKDGI~~GAAEPI~~**SVPGL**
LKRTVNNDYPAIRTKNGKNGYHTVTKQYEQKVHQ~~VAKAFIKLGLIEEH~~**SVGLAFNCA**
EWFYSAMGAIHARGIIAGIYTINSADAQVQHVLESSHAQIVVVDDAKQMDKIHAIRDKLKPLKPLKKA
 AIQIQEPYSPYLKKEDGYYRWSEIESMNVS~~DVEDQYMT~~RLENVAINEC~~CCCLVYTS~~SGTVGMPK
 GVMLSHDNIITFDVRGIVKAMDRVVVGAE~~SIVSY~~PLSHVA~~AQ~~TVDIYTCAFVAGCIWFADKDA
 LKGTLVKSLOQDARPTRFMGVPRVYKEFQERMVAVASSGSLKKM~~LA~~SWAKG~~ITLKH~~YMW~~S~~
 QGKSSGGFRYKIAKSLIMSKVKOALGFDRVLT~~LA~~AAAPMSPETKKYFLSLDLKIVDAFGMS
 ETAGCHTICLPDSVGLNTIGKTLPGE~~SKFINKDANGH~~GELCIRGRHVF~~M~~GYIDNKR~~KETEE~~SL
 DDDCWLHSQDILGFVDDKG~~YVSLTGRSKEIIITAGGENIPPVH~~IENTIKKELDAISNAFLVGEQR
 KYLTVLITLKTEVDKDSGEPLDELSSHES~~SVWVKSLGVEHKTVSDIL~~AAGPCKWKSI~~EDAIK~~
RANKQSISNAQKVQKFFTILPHDFSIPTGELGPTH~~PKG*~~CGGACTTCCAAAGCCAATTGAGTGC~~CACTTT~~
 TAATTGATTAGGCTGATGTA~~ACTGTTGGATATTAAACTAAGAACAACTATGGCCTATGGCTAGGTAGACA~~
 CGAGCTTGCCAACGATTAGGTCCAGAGATCATTTAATTAGTAAGTTTATATACTATTGGTTG
 TACCAACTGAACAAACGAAAATTGTTATTGTCTGAAGAGCAACATAAATTGTAATTAGATTAACTACCAAA
 AAAA

FIG. 3A-3

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B = *Bubblegum*
 H = Human KIAA0631
 R = Rat VLCFA Synth.

B	MSTIDAFYNRPGPNRLRQADAYRTTNR-	QDAVKIRMAKDGIGAE	EPISVPGTLIKRTVNYYGDP	70			
H	GIGNLNNCBIEEXTACCFPAAKIAAPR-	-TEINRLRIDPSCP--	QIPYTVMFYEALDKYGDLI				
R	MLPVLYTGLAGILLPLLTCCC	QDVRF	QOLANMARQVRSYQRQRPVRTILHVELEQARKTPHKE				
B	AIRTKNGKNGYHTVTYKQYEQKVHQVAKAFIK-	LGIEEHHSVGVIAFNCAEWFYSAMGAIHARGGIAGIY		130			
H	ALGFKR-QDKWEHISYSQYLLARRAAKGFLK-	LGLKOAHNSVAIILGENSPPEWFESSAVGTVFAGGIVTGY					
R	FLLERD-----ETLTYAQVDRRSNQVARAIIHDHLGRLQGDCVAL	FMGNEPAYVWLWLGILKL	GCPMACIN				
B	TNSADAVQHYLESSHAQIVVVDDAKQMDKTHATRDKLPLKAAITQI	QEPYSPYLKREDGYRWSEIESM		210			
H	TSSPEACQYTAYDCANVIMVDTQKOLEKILKWKQLPHLKAIVVIKEPP--	NKMANVYTMEEFMEL					
R	YNIRAKSLTHCFCQCCGARVLLAS-PELHEA	VSRSTS---NTNGVDTVL	DKVDGV				
B	150	160	170	180	190	200	210
H	150	160	170	180	190	200	210
R	150	160	170	180	190	200	210
B	220	230	240	250	260	270	280
H	220	230	240	250	260	270	280
R	220	230	240	250	260	270	280
B	290	300	310	320	330	340	350
H	290	300	310	320	330	340	350
R	290	300	310	320	330	340	350

FIG. 3B-1

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B = *Bubblegum*
H = *Human KIAA0631*
R = *Rat VLCFA Synth.*

<p><i>B</i> LKKMTASWAKGITLKHMVSQGKSSGGFRYKIAKSLIMSKVKQALGFDRVLTLASAAPMSPETKKYFLS <i>H</i> IRRKMILWAMSVTLEQNITCPGSDLKPFTRLADYLVAKVRQALGFAKCQRNFYGAPMMAETQHFFF <i>R</i> VKIAIGNGIRGDVWREFIKRFG------DIHIYEFYA-----STEGNIEFMNYPRKIGAVG------RENYLQK</p>	<p>370 380 390 400 410 420</p>
<p><i>B</i> DLIKIVDAFGMSETAGGHTIICILPSVGLNITIGKITILPGCESREFINKDANGGHELCIRGHFVFMGYIDNKEK <i>H</i> UNIRIYAGYGLSETSGPHEMSPYNYRLYSSGKbLVGCRVKLVNQDAEGIGEICLWGRTIFMGYLNMED <i>R</i> KVVRHELIKYDVEPVRDANGYCIKVP------K------GEVGLICKTIETLPFFGYAG------GKTQTEKK</p>	<p>430 440 450 460 470 480 490</p>
<p><i>B</i> TEESLDDC--WIHSGDLGFVDKGYVSLTGRSKEIIIITAGGENIPPVHIETI------RIKELDAISNAEI <i>H</i> TCEAIDEEG--WIHTGDAGRLDADGFLIYITGRLKELIITAGGENVPPVPIEFAV------KMELIPIISNAMI <i>R</i> KLRDVFKRGDVYFNSGDILMIDRENFIYFHDRVGDTFRWRG-ENVATEVDIVGLDFVEVNVYGVEV</p>	<p>500 510 520 530 540 550 560</p>
<p><i>B</i> VGEQRKYLTVLITLKTEVDKDSGEPLDEILSHESSVWVRSLGVEHKTVSDIIAGPCPKVWKSIEDAIKRA <i>H</i> IGDQRKFLSMLLTLKCTLDPDISDQTDNLTEQAVEFCQRVSRATTVSEIIEK-KDEAVYQAIEGIRRV <i>R</i> RGHEGRIGMASIKMKENYEFNGKKIFQHISEYLPSYSRPRFLRIODTIEITGI-FKHRKVTIMEEGFNPS</p>	<p>570 580 590 600 610 620 630</p>
<p><i>B</i> NKQSISNAQKVQKFTILPHDFSIPTGELGPTHPKG <i>H</i> NMNAAARPYHIQKWAIIERDFSISGGELGPTMKLKRLTVLEKYKGIIDSFYQEQK <i>R</i> VIKDILYFMDDTEKIVYVPMTEDIYNAIDKTLK</p>	<p>640 650 660 670 680 690 700</p>

FIG. 3B-2

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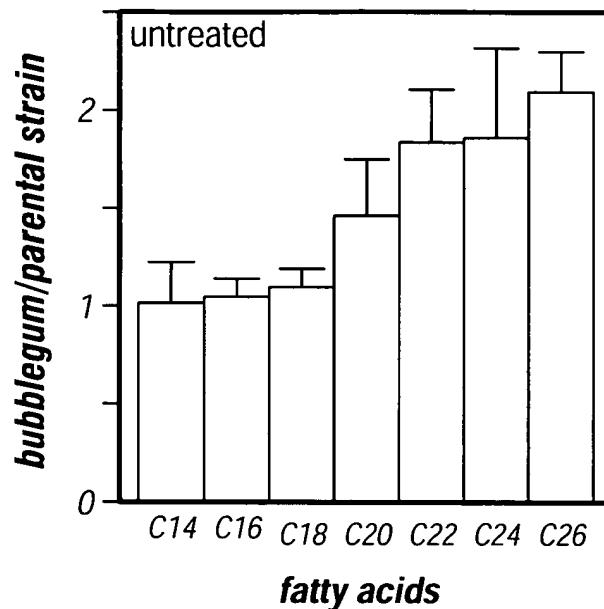


FIG. 4A

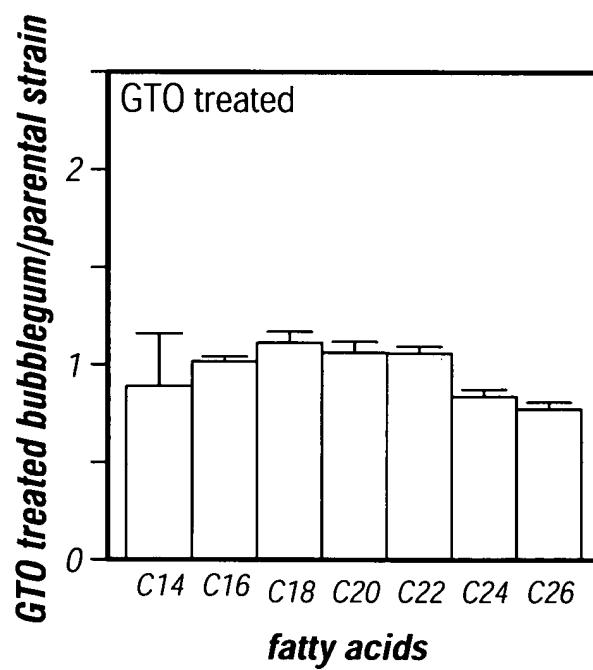
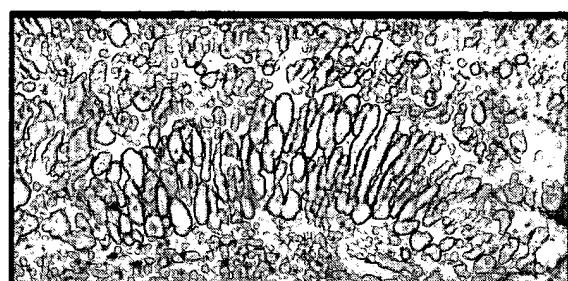
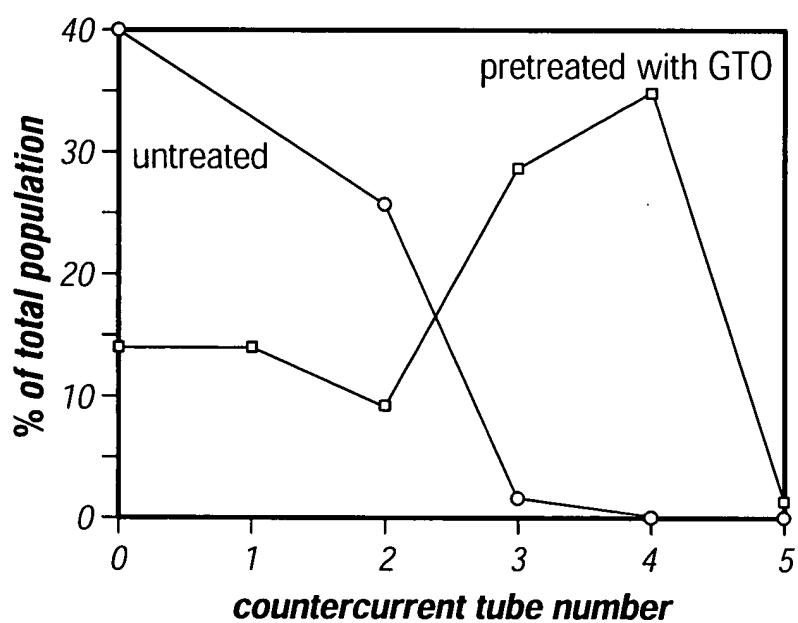


FIG. 4B

9/10**FIG. 5A****FIG. 5B****FIG. 5C****BEST AVAILABLE COPY**

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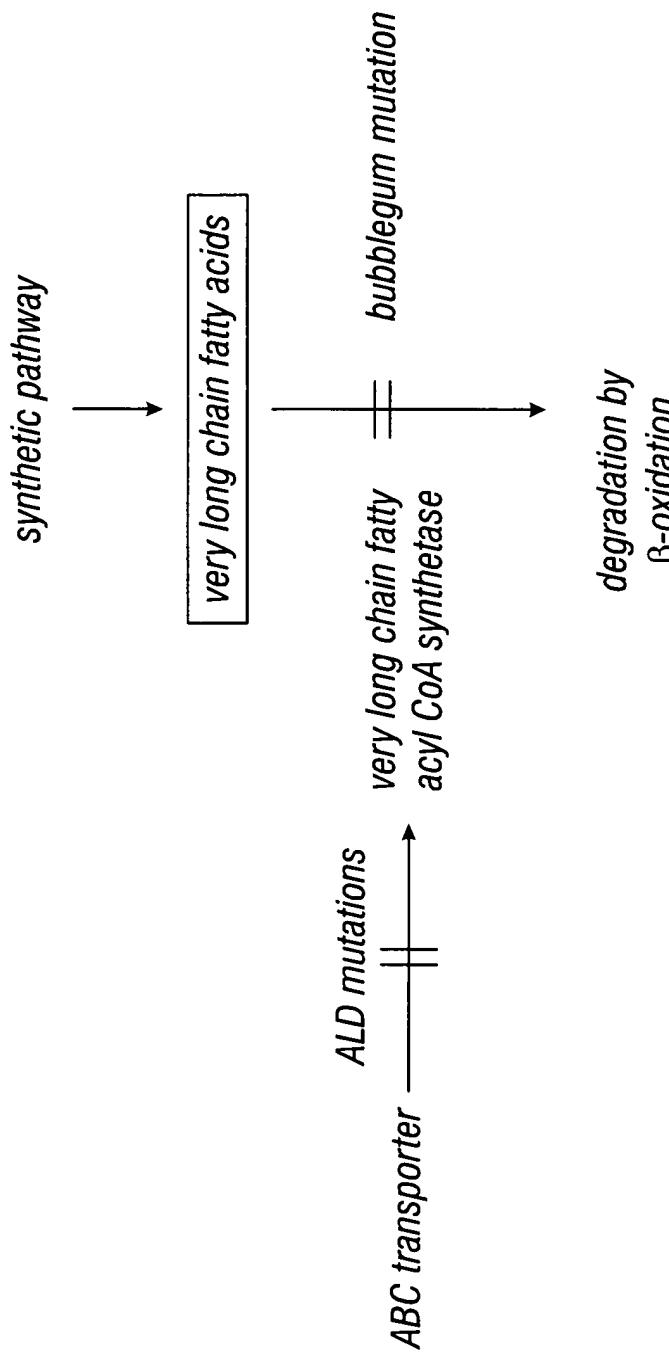


FIG. 6